

A-04015 FIGS. 1 - 35

FIG. 1

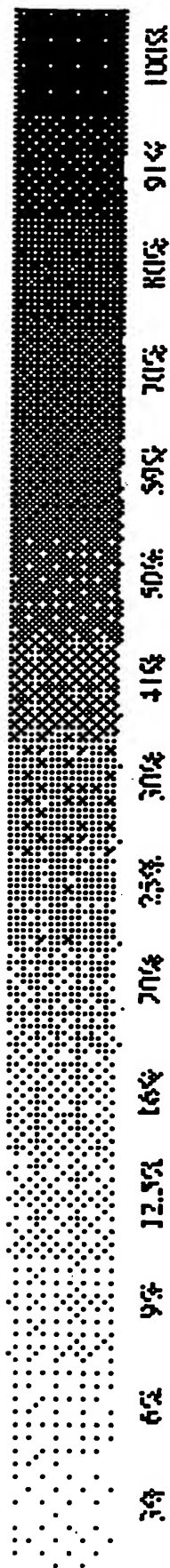


FIG. 2

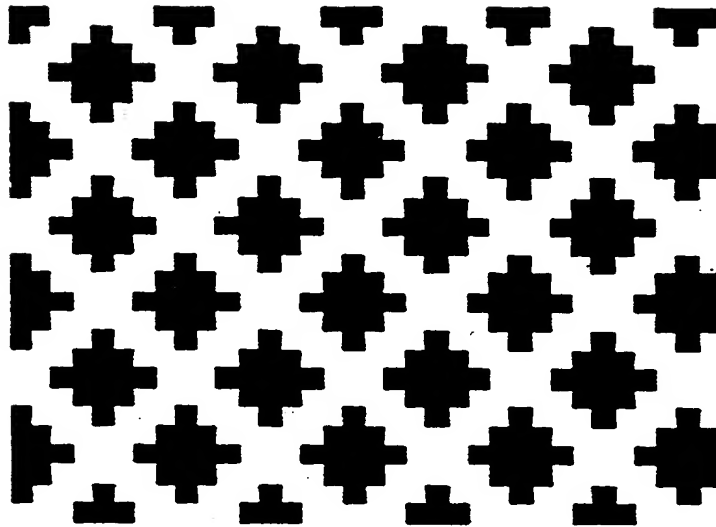


FIG. 3

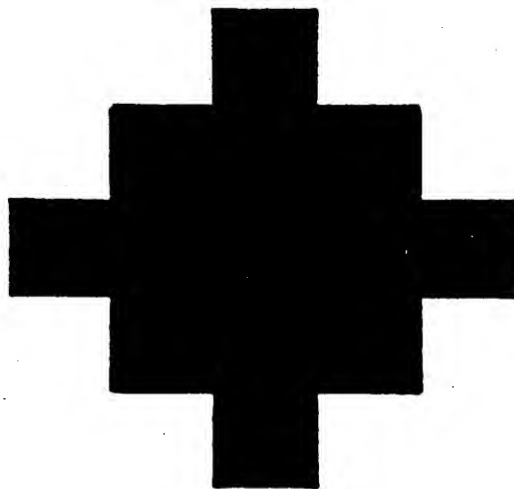


FIG. 4

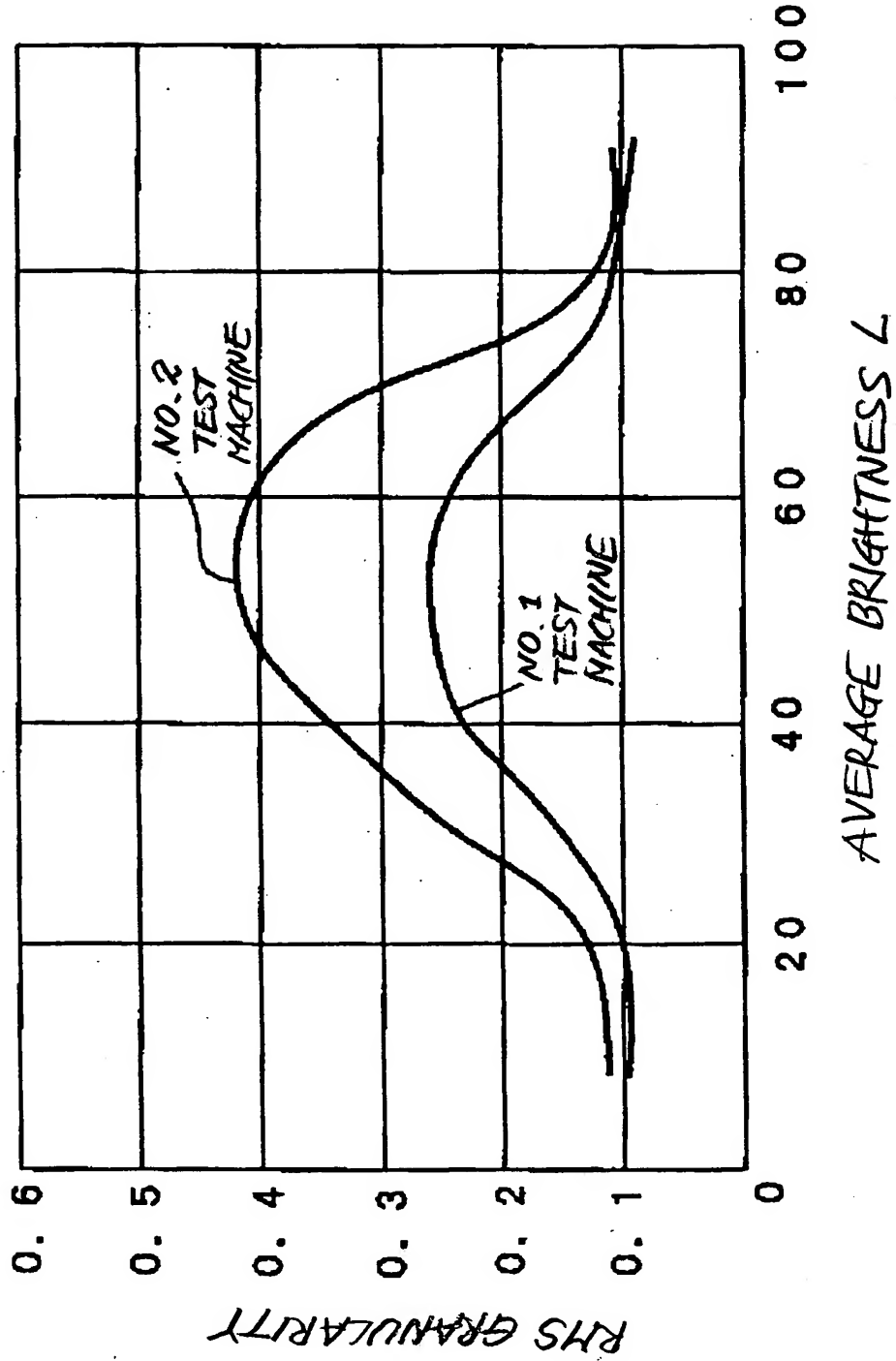


FIG. 5

GRADATION AREA RATIO	AVERAGE BRIGHTNESS L	GRANULARITY FROM FORMULA 3
3%	92.6	0.08
6%	88.8	0.21
9%	85.4	0.3
12.5%	82	0.3
16%	78.2	0.35
20%	74.1	0.43
25%	69.1	0.44
30%	65.1	0.47
41%	51.9	0.50
50%	45.7	0.41
59%	36.9	0.38
70%	31.4	0.34
80%	23.7	0.24
91%	17.6	0.2
100%	14.1	0.13

FIG. 6

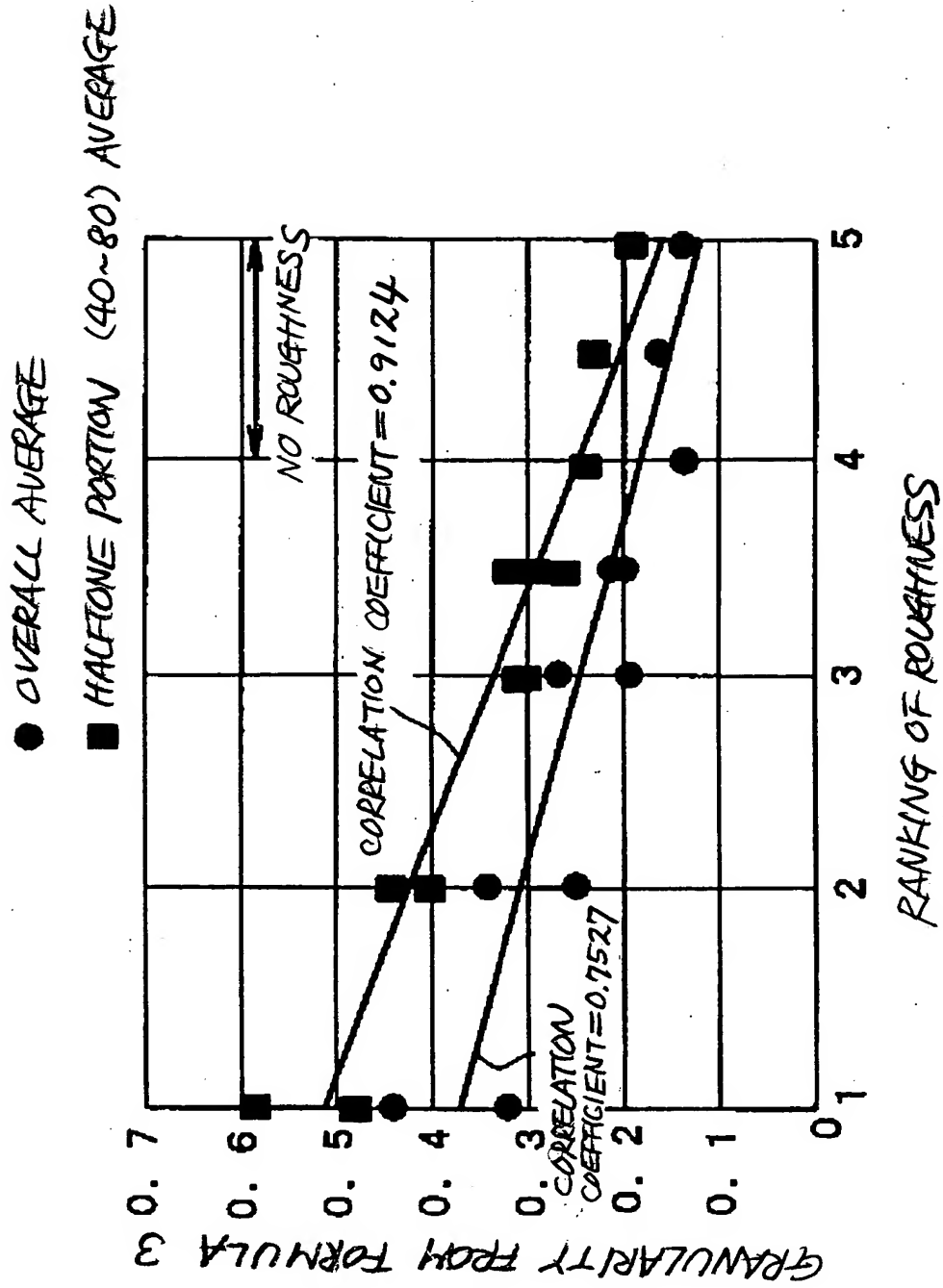


FIG. 7

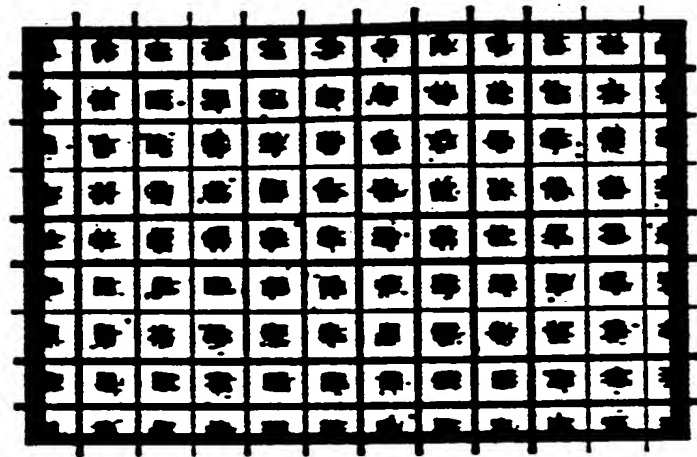


FIG. 8



FIG. 9

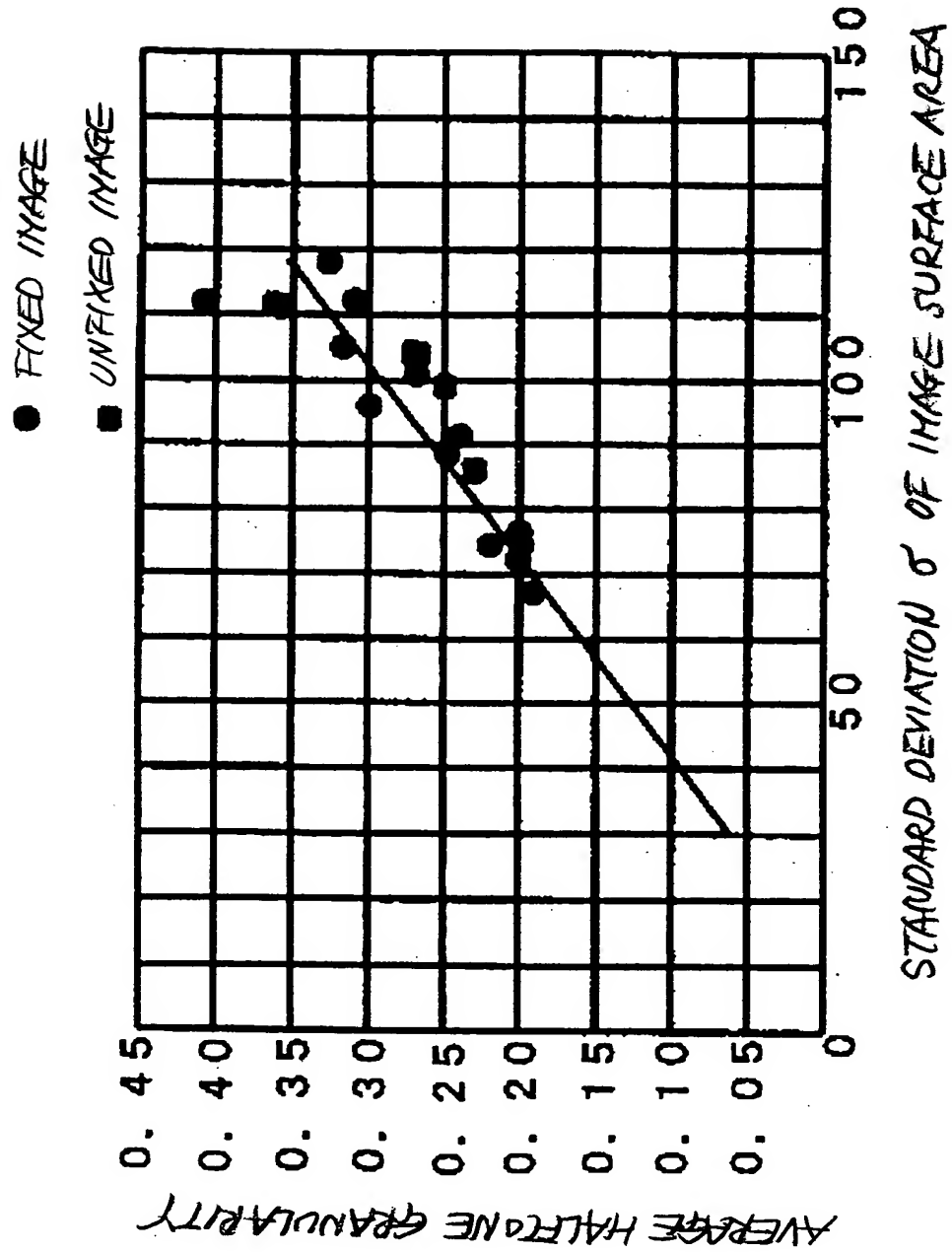
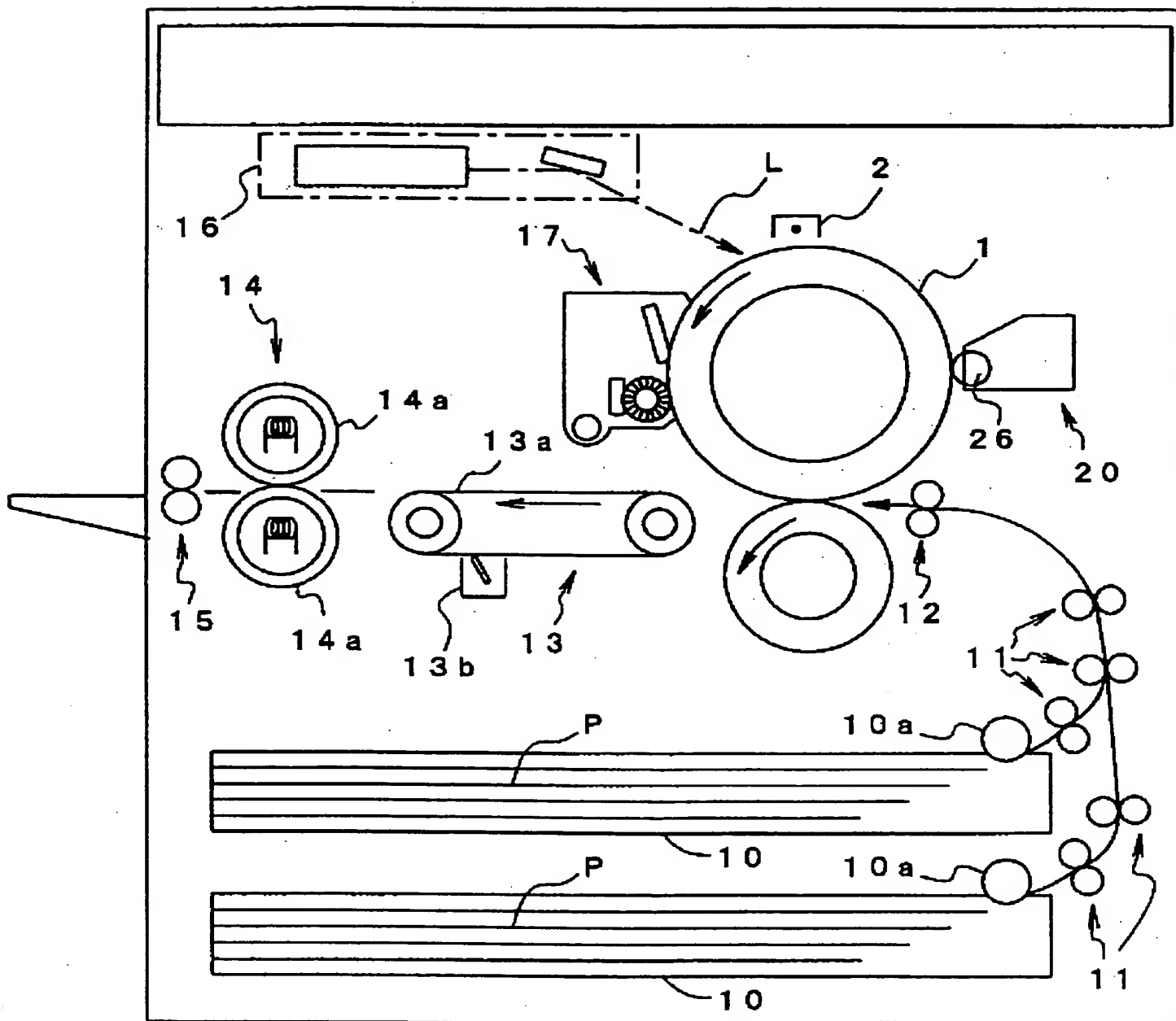


FIG. 10



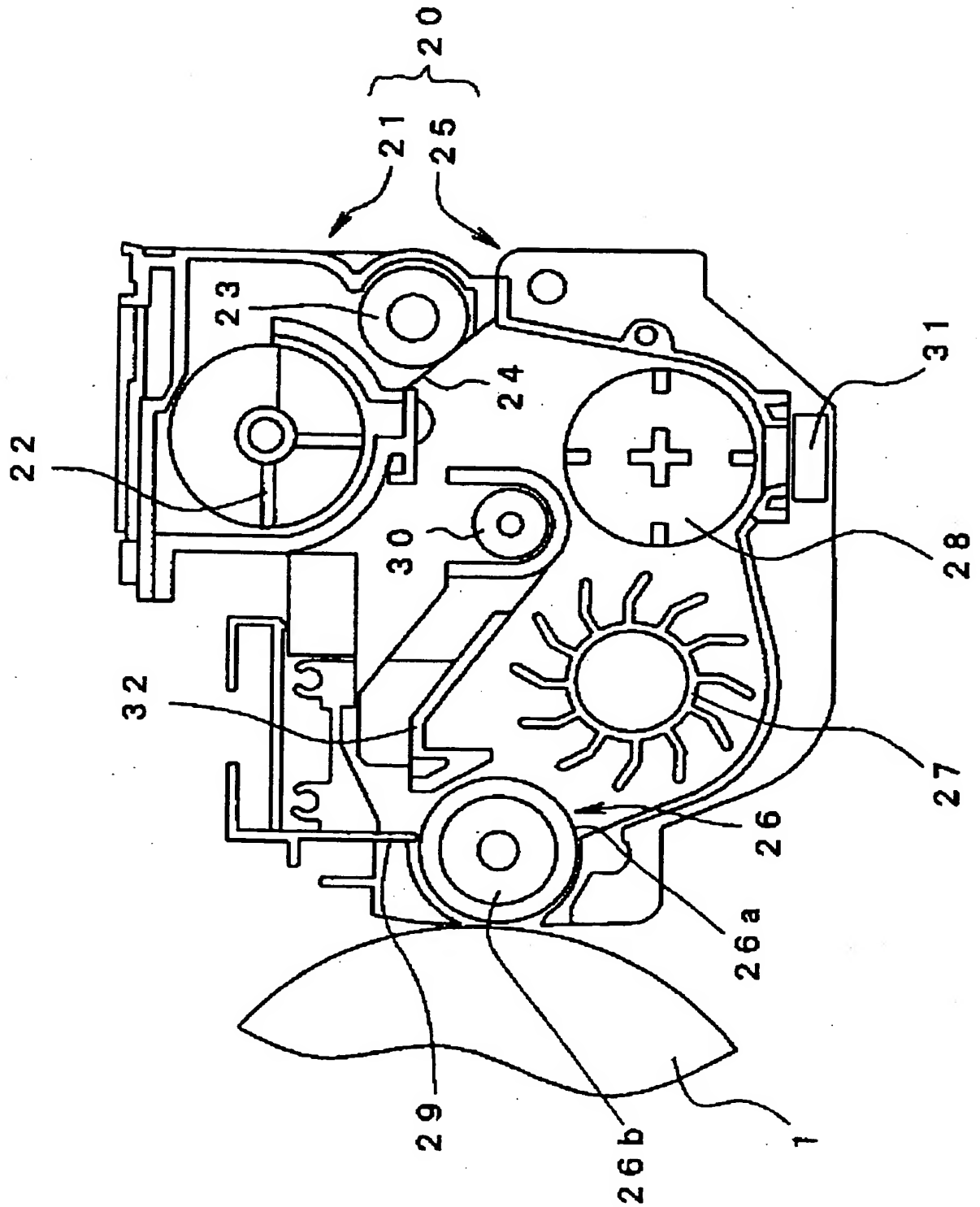


FIG. 12

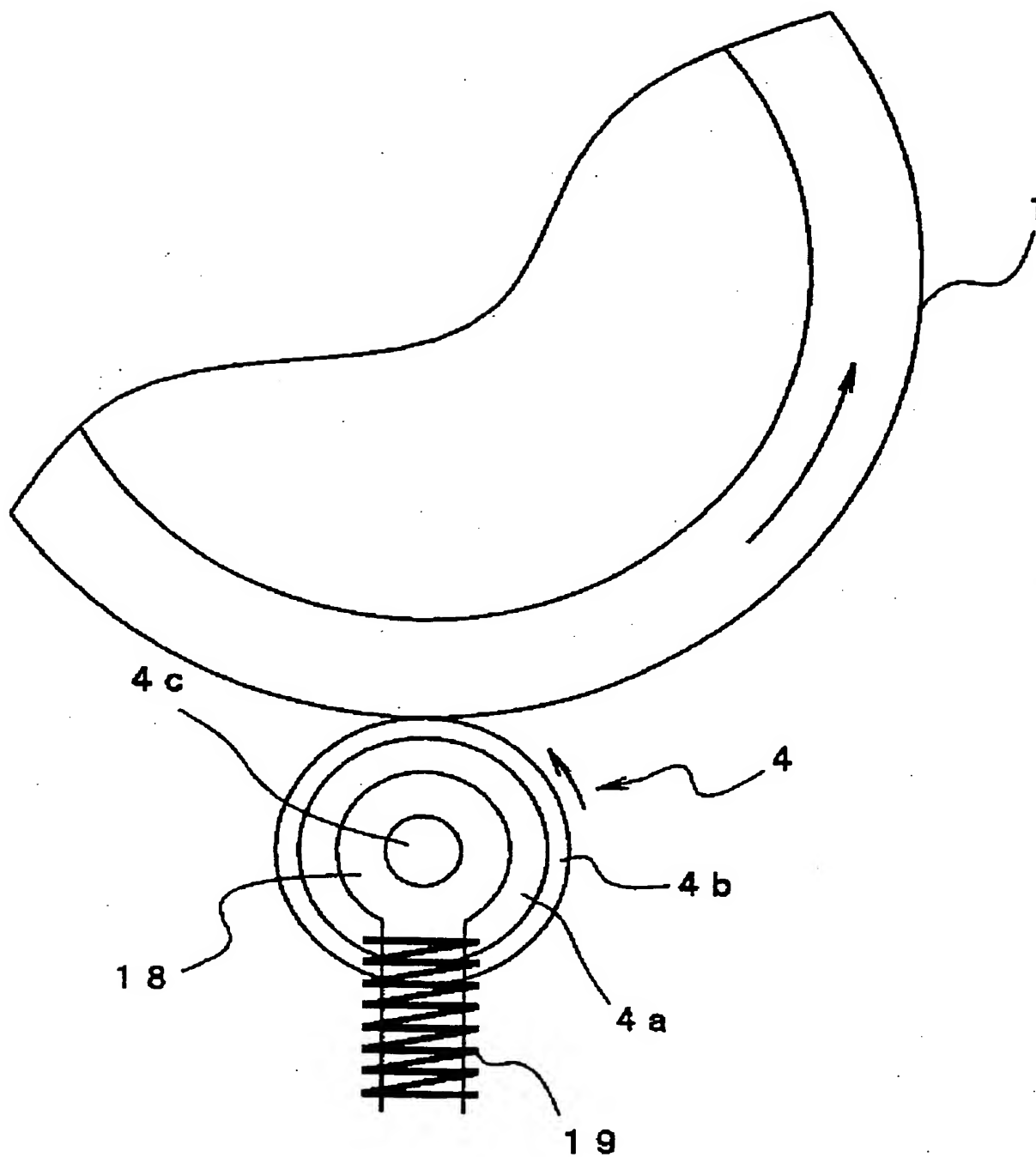


FIG. 13

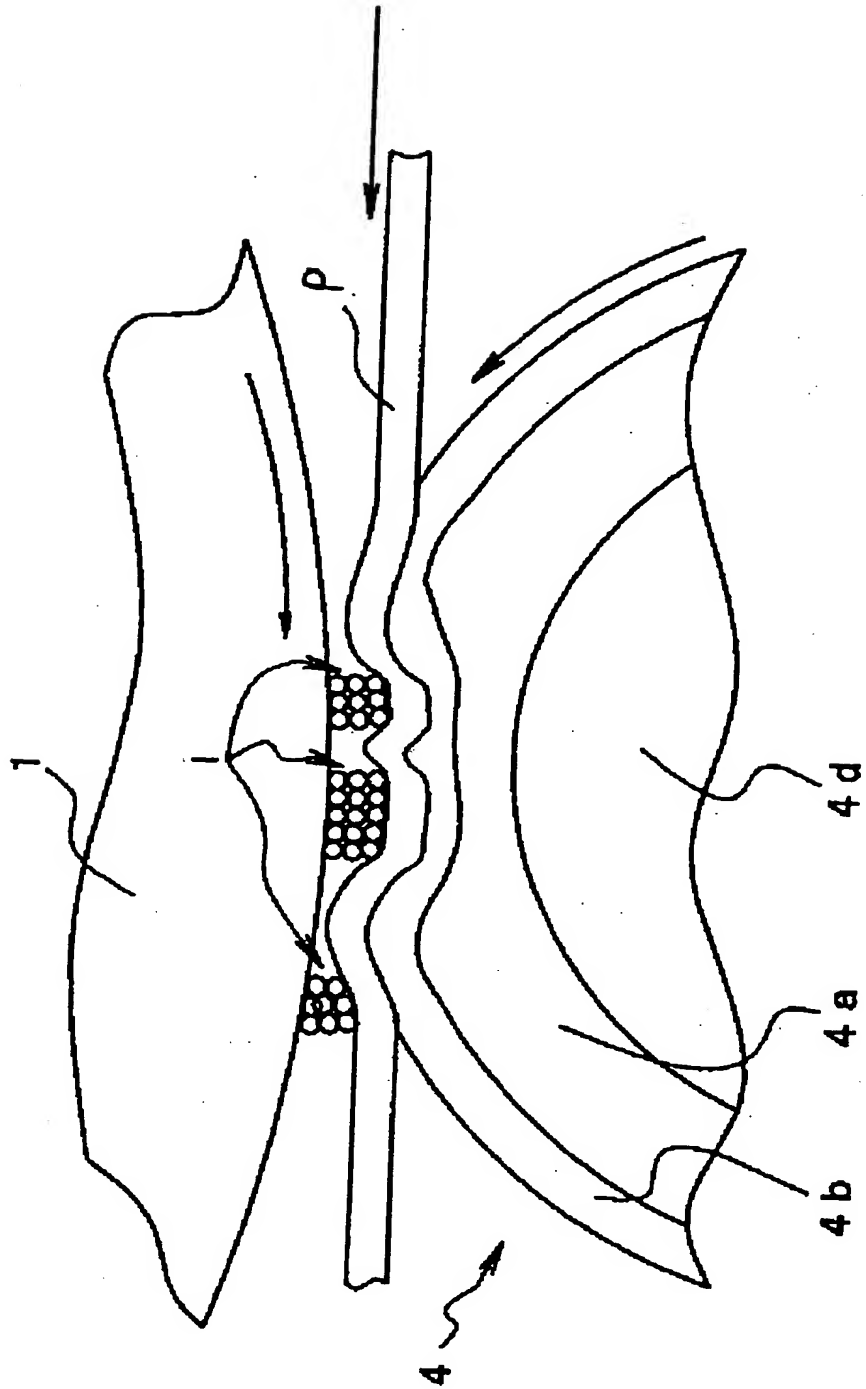


FIG. 14

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION
1	4.2	0.98	1.1
2			1.2
3			1.3
4			1.4
5		0.95	1.1
6			1.2
7			1.3
8			1.4
9		0.9	1.1
10			1.2
11			1.3
12			1.4
13		0.85	1.1
14			1.2
15			1.3
16			1.4

FIG. 15

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION
17	6.8	0.98	1.1
18			1.2
19			1.3
20			1.4
21		0.95	1.1
22			1.2
23			1.3
24			1.4
25		0.9	1.1
26			1.2
27			1.3
28			1.4
29		0.85	1.1
30			1.2
31			1.3
32			1.4

FIG. 16

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION
33	9.0	0.98	1.1
34			1.2
35			1.3
36			1.4
37		0.95	1.1
38			1.2
39			1.3
40			1.4
41		0.9	1.1
42			1.2
43			1.3
44			1.4
45		0.85	1.1
46			1.2
47			1.3
48			1.4

FIG. 17

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION	ESTIMATED AVERAGE HALFTONE GRANULARITY OF PHOTORECEPTOR
1	4.2	0.98	1.1	0.10
2			1.2	0.15
3			1.3	0.16
4			1.4	0.16
5		0.95	1.1	0.10
6			1.2	0.12
7			1.3	0.17
8			1.4	0.18
9		0.9	1.1	0.15
10			1.2	0.16
11			1.3	0.18
12			1.4	0.20
13		0.85	1.1	0.18
14			1.2	0.18
15			1.3	0.17
16			1.4	0.21

FIG. 18

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE(μ m)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION	ESTIMATED AVERAGE HALFTONE GRANULARITY OF PHOTORECEPTOR
17	6.8	0.98	1.1	0.16
18			1.2	0.19
19			1.3	0.23
20			1.4	0.22
21		0.95	1.1	0.16
22			1.2	0.19
23			1.3	0.21
24			1.4	0.23
25		0.9	1.1	0.19
26			1.2	0.21
27			1.3	0.23
28			1.4	0.24
29		0.85	1.1	0.20
30			1.2	0.22
31			1.3	0.22
32			1.4	0.24

FIG. 19

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION	ESTIMATED AVERAGE HALFTONE GRANULARITY OF PHOTO RECEPTOR
33	9.0	0.98	1.1	0.24
34			1.2	0.24
35			1.3	0.25
36			1.4	0.29
37		0.95	1.1	0.25
38			1.2	0.25
39			1.3	0.28
40			1.4	0.30
41		0.9	1.1	0.24
42			1.2	0.27
43			1.3	0.26
44			1.4	0.25
45		0.85	1.1	0.27
46			1.2	0.31
47			1.3	0.38
48			1.4	0.36

FIG. 20

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION	GRANULARITY ON PHOTORECENTER (A)	TRANSFER PRESSURE (N/mm^2)	TRANSFER CURRENT (mA/mm^2)	UNFIXED GRANULARITY (B)	INCREASE IN GRANULARITY DUE TO TRANSFER (B-A)
1	4.2	0.98	1.1	0.10	0.04	10	0.25	0.15
						20	0.2	0.1
						200	0.17	0.07
						400	0.17	0.07
					0.2	10	0.23	0.13
						20	0.17	0.07
						200	0.15	0.04
						400	0.15	0.05
						10	0.22	0.12
						20	0.22	0.12
						200	0.14	0.06
						400	0.14	0.06
					1	10	0.22	0.12
						20	0.16	0.06
						200	0.16	0.06
						400	0.16	0.06
					0.2	10	0.23	0.13
						20	0.17	0.07
						200	0.17	0.07
						400	0.17	0.07
					0.04	10	0.31	0.14
						20	0.28	0.11
						200	0.25	0.08
						400	0.25	0.08
					0.2	10	0.3	0.13
						20	0.23	0.06
						200	0.22	0.05
						400	0.22	0.05
						10	0.29	0.12
						20	0.31	0.14
						200	0.29	0.12
						400	0.29	0.12
					2	10	0.22	0.12
						20	0.22	0.12
						200	0.22	0.12
						400	0.22	0.12
					0.04	10	0.35	0.14
						20	0.31	0.14
						200	0.28	0.08
						400	0.28	0.08
					0.2	10	0.35	0.14
						20	0.29	0.08
						200	0.27	0.06
						400	0.27	0.06
					1	10	0.34	0.13
						20	0.27	0.06
						200	0.26	0.05
						400	0.26	0.05
					2	10	0.35	0.14
						20	0.33	0.12
						200	0.37	0.16
						400	0.36	0.15

FIG. 21

[illegible]

FIG. 22

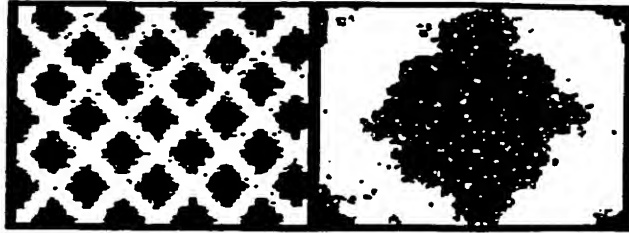


FIG. 23

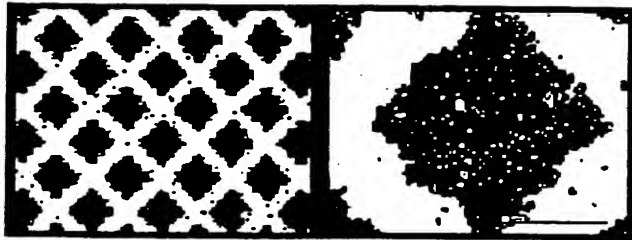


FIG. 24

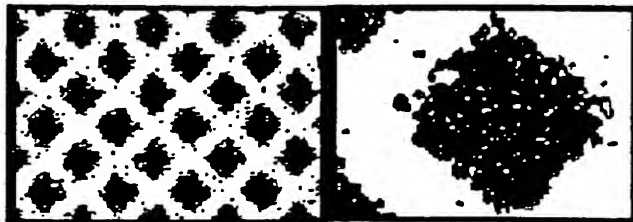


FIG. 25

TONER NO.	WEIGHT AVERAGE PARTICLE SIZE (μm)	AVERAGE CIRCULARITY	DEGREE OF DISPERSION	GRANULARITY ON PHOTORECEPTOR (A)	TRANSFER PRESSURE (N/mm ²)	TRANSFER CURRENT ($\mu\text{A}/\text{mm}^2$)	UNFIXED GRANULARITY (B)	TYPE OF FIXING ROLLER	GRANULARITY AFTER FIXING (C)	INCREASE IN GRANULARITY DUE TO FIXING (C-B)
1	4.2	0.98	1.1	0.10	0.2	20	0.17	①	0.21	0.04
								②	0.27	0.10
								③	0.33	0.16
					1	200	0.15	①	0.19	0.04
								②	0.27	0.12
								③	0.30	0.15
								①	0.21	0.05
								②	0.27	0.11
								③	0.31	0.15
						200	0.14	①	0.18	0.04
								②	0.24	0.10
								③	0.31	0.17
7	4.2	0.95	1.3	0.17	0.2	20	0.17	①	0.28	0.05
								②	0.34	0.11
								③	0.40	0.17
					1	200	0.15	①	0.28	0.06
								②	0.34	0.12
								③	0.38	0.16
						20	0.16	①	0.28	0.04
								②	0.34	0.10
								③	0.40	0.16
					200	200	0.14	①	0.28	0.06
								②	0.31	0.09
								③	0.38	0.16

FIG. 26

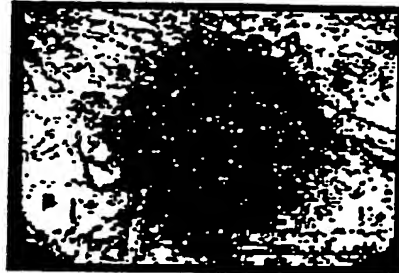


FIG. 27

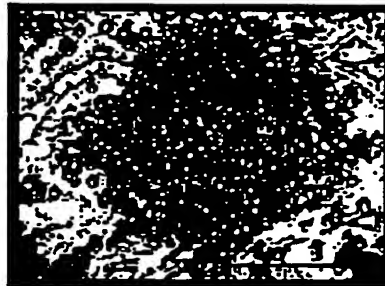


FIG. 28



FIG. 29

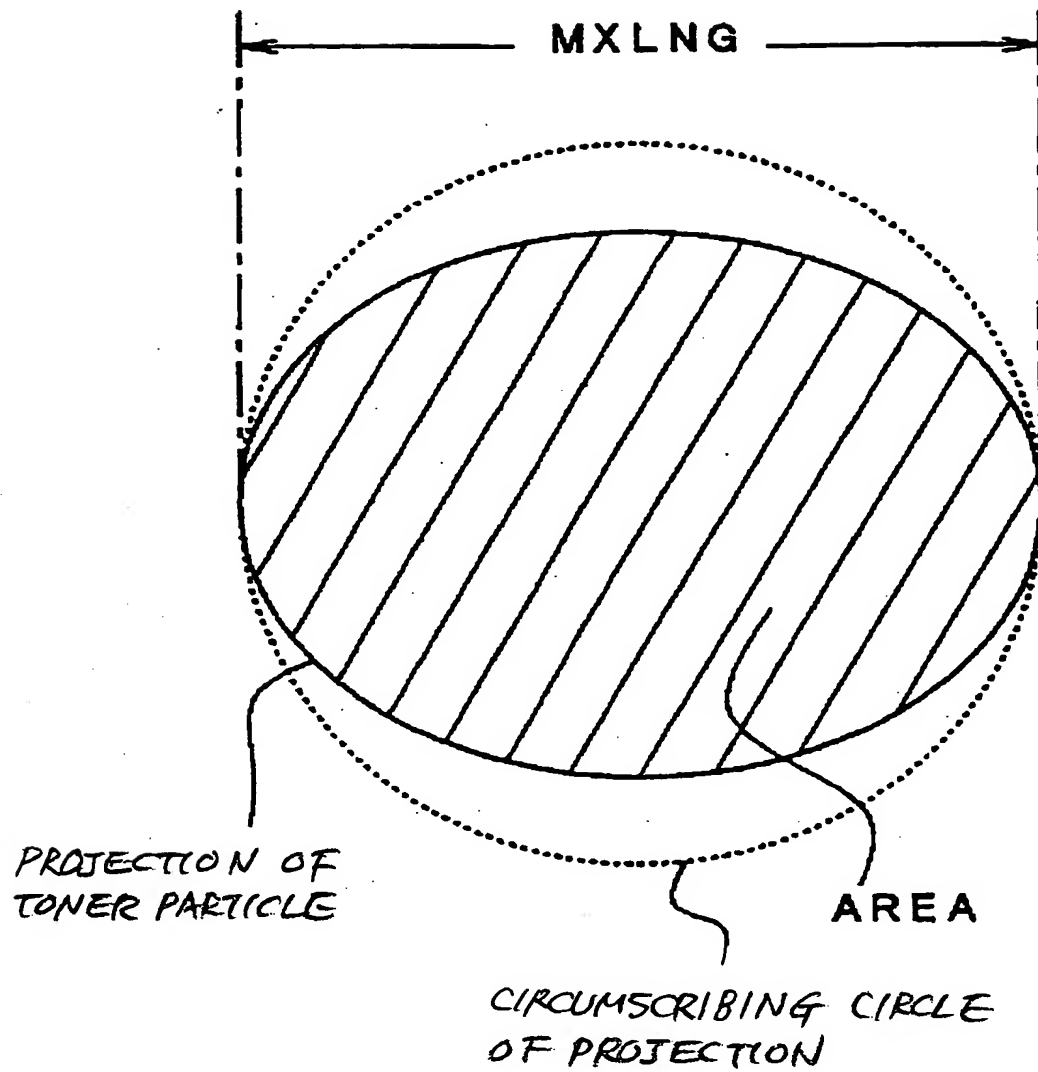


FIG. 30

TONER LETTER	SPACE FACTOR SF-1	AVERAGE CIRCULARITY	DEGREE OF DISPERSION	DEGREE OF DISPERSION	GRANULARITY ON PHOTORECEPTOR (A)
A	140	0.92	1.39	25	0.18

TONER LETTER	B
SHAPE FACTOR SF-1	130
AVERAGE CIRCULARITY	0.92
DEGREE OF DISPERSION	1.37
DEGREE OF DISPERSION	24
GRANULARITY ON PHOTO RECEPTOR (A)	0.17
TRANSFER PRESSURE (N/mm ²)	0.04
TRANSFER CURRENT (mA/mm ²)	10 20 200 400
TRANSFER RATIO (%)	31(X) 81(O) 84(O) 82(O)
UNFIXED GRANULARITY (B)	0.32 0.27 0.26
INCREASE IN GRANULARITY DUE TO TRANSFER (B-A)	0.15 0.10 0.09
TYPE OF FIXING ROLLER	① ② ③
GRANULARITY AFTER FIXING (C)	0.28 0.34 0.4
INCREASE IN GRANULARITY DUE TO FIXING (C-B)	0.04 0.10 0.16
TRANSFER PRESSURE (N/mm ²)	1.00
TRANSFER CURRENT (mA/mm ²)	400 10 20
TRANSFER RATIO (%)	85(O) 47(X) 86(O)
UNFIXED GRANULARITY (B)	0.25 0.23
INCREASE IN GRANULARITY DUE TO TRANSFER (B-A)	0.08 0.06 0.06
TYPE OF FIXING ROLLER	① ② ③
GRANULARITY AFTER FIXING (C)	0.27 0.34 0.38
INCREASE IN GRANULARITY DUE TO FIXING (C-B)	0.04 0.11 0.15
TRANSFER PRESSURE (N/mm ²)	2.00
TRANSFER CURRENT (mA/mm ²)	400 10 20 200 400
TRANSFER RATIO (%)	85(O) 57(X) 82(O) 81(O) 73(A)
UNFIXED GRANULARITY (B)	0.25 0.31 0.29
INCREASE IN GRANULARITY DUE TO TRANSFER (B-A)	0.08 0.14 0.12
TYPE OF FIXING ROLLER	① ② ③
GRANULARITY AFTER FIXING (C)	0.27 0.34 0.42
INCREASE IN GRANULARITY DUE TO FIXING (C-B)	0.04 0.11 0.20

FIG. 32

33
G.
F

[illegible]

FIG. 34

Toner Letter	E
Shape Factor SF-1	115
Average Circularity	0.97
Degree of Dispersion	1.2
Degree of Dispersion	18
Granularity on Photoreceptor(A)	0.1
Transfer Pressure (N/mm ²)	0.04 0.20 1.00 2.00
Transfer Current (mA/mm ²)	10 20 200 400 10 20 200 400 10 20 200 400
Transfer Ratio (%)	33(X) 81(O) 83(O) 81(O) 30(X) 83(O) 85(O) 85(O) 45(X) 84(O) 85(O) 85(O) 85(X) 80(O) 81(O) 78(Δ)
Unfixed Granularity (B)	 0.20 0.18 0.17 0.16 0.14 0.16 0.16 0.14 0.15
Increase in Granularity Due to Transfer (B-A)	 0.10 0.08 0.07 0.06 0.04 0.06 0.06 0.04 0.05
Type of Fixing Roller	
Granularity After Fixing (C)	 0.20 0.26 0.32 0.17 0.25 0.30 0.19 0.22 0.34 0.18 0.24 0.32
Increase in Granularity Due to Fixing (C-B)	 0.03 0.10 0.16 0.04 0.09 0.16 0.04 0.10 0.17 0.03 0.11 0.16

[illegible]